UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,062	11/16/2001	Seung-Hoon Hwang	HI.0054	7850

34610	7590	07/28/2006	

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EXAMINER
PHUNKULH, BOB A

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 07/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Office Action Summary	Application No.	Applicant(s)	
		09/988,062	HWANG, SEUNG-HOON	
		Examiner	Art Unit	
		Bob A. Phunkulh	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 May 2006</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-7 and 9-11* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-7 and 9-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>3/15/2006</u>.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

This communication is in response to applicant's 05/24/2006

amendment(s)/response(s) in the application of **HWANG** for "**METHOD OF LINK**

ADAPTATION OF BLIND TYPE USING ACKNOWLEDGEMENTS IN ARQ SYSTEM"

filed 11/16/2001. The amendments/response to the claims have been entered. No

claims have been canceled. Claims 12-13 have been added. Claims 1, 3-7, 9-13 are

now pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, 5-7, 11-13 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Lin et al. (US 6,249,897), hereinafter Lin, in view of Gardner et al.

(US 5,729,557), hereinafter Gardner.

Regarding claim 1, Lin discloses a method of controlling an wireless

communication link in a transmitter of an wireless communication system automatically

requiring a retransmission from a receiving party to a transmitting party, the method

comprising the steps of:

transmitting data by an initial coding rate and/or an initial transmission power

value to the receiving party (the base station transmit data frame with initial

transmission power, see col. 3 lines 50-59);

receiving a retransmission request signal from the receiving party (the transcoder

in the base station determines whether to re-transmits the messages based on the

received feed back signal, see col. 4 lines 6-15); and

performing the data retransmission by increasing the transmission power

according to the retransmission request (if the stored message is to be retransmitted,

the base station will preferably transmit the message at an increased power level, and

if the first transmission occurred at a first power level, the second transmission will

occur at a second power level greater than the first power level, see col. 4 line 21-27).

Lin fails to discloses performing the data retransmission by decreasing the initial

coding rate.

Gardner, on the other, teaches performing the data retransmission by changing

initial coding rate of $^2/_3$ to ½ or $^1/_3$ (see col. 2 lines 43-54).

Therefore, it would have been obvious to one having ordinary skill in the art at

the time of invention was made implement the teaching on Gardner in the system

taught by Lin especially decreasing the coding rate in order to improve the reception

quality at the receiver for data retransmission.

Regarding claim 7, Lin discloses a method of controlling an wireless

communication link in a transmitter of an wireless communication system that

automatically requiring a retransmission from a receiving party to a transmitting party,

the method comprising the steps of:

transmitting data by an initial coding rate and/or an initial transmission power

value to the receiving party the base station transmit data frame with initial transmission

power, see col. 3 lines 50-59);

receiving a retransmission request signal from the receiving party (the transcoder

in the base station determines whether to re-transmits the messages based on the

received feed back signal, see col. 4 lines 6-15); and

performing the data retransmission by increasing the number of multi-codes

according to the retransmission request (if a signaling message was spread across

multiple frames, and the entire message is required, the entire message will be resent,

see col. 4 lines 49-58);

wherein channel environment information of the wireless communication link is

not required at the transmitter for the performing the data retransmission (the transmitter

simply wait for the timer to expired and resend the data if ACK is not received, see col.

1 lines 22-42).

Lin fails to discloses performing the data retransmission by decreasing the initial

coding rate.

Gardner, on the other, teaches performing the data retransmission by changing

initial coding rate of $^2/_3$ to ½ or $^1/_3$ (see col. 2 lines 43-54).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made implement the teaching on Gardner in the system taught by Lin especially decreasing the coding rate in order to improve the reception quality at the receiver for data retransmission.

Regarding claim 5, Gardner discloses the power value is gradually increased while the data retransmission is performed according to the retransmission request (the transmit power is gradually increased before selecting a lower code rate, see col. 2 lines 30-42).

Regarding claim 6, Lin discloses the retransmission step is performed by maintaining the initial coding rate and increasing the transmission power according to the retransmission request (see col. 4 lines 19-26).

Regarding claim 11, Lin discloses the retransmission step is performed by maintaining the initial coding rate and increasing the number of multi-codes according to the retransmission request (see col. 4 lines 49-28).

Regarding claim 12, Lin discloses channel environment information of the wireless communication link is not required at the transmitter for the performing the data retransmission (the transmitter simply wait for the timer to expired and resend the data if ACK is not received, see col. 1 lines 22-42).

Regarding claim 13, Gardner discloses decreasing the coding rate from 2/3 to ½

to 1/3 to improve error correction in digital radio communication system, and decreasing

the coding rate in fix pattern (see col. 2 lines 43-49).

Regarding claims 3, and 9, Lin inherently discloses that the transmission power

is returned to an initialized value, if a response signal is received from the receiving

party after performing the retransmission step (only message need to retransmit is

transmit at a second power level grater than the first power level, see col. 4 lines 21-

26).

Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over

the combination of Lin-Garder as applied to claims 1 and 7 above, and further in view of

Moulsley (US 6,898,417).

Regarding claims 4 and 10, the combination of Lin-Gardner fails to disclose if the

decrease of the coding rate for the retransmission reaches a lowest coding rate, the

retransmission is continuously performed at the lowest coding rate, while the

transmission power is continuously increased.

Moulsley, on the other hand, disclose that by retransmitting at a greater power

level, the probability of correct reception is enhanced, especially when the

communication link is wireless (see abstract).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made includes the teaching of Moulsley especially retransmitting the data at a greater power in the system taught by the combination of Lin-Gardner for retransmitting at a greater power level provides the probability of correct reception at the wireless receiver.

Response to Arguments

Applicant's arguments filed 05/24/2006 have been fully considered but they are not persuasive.

In response to the applicant's argument in page 6-7, the examiner respectfully disagree with the applicant's argument especially "the examiner asserts that Lin disclose performing the data transmission by decreasing the initial coding rate and increasing the power according to the retransmission request." In the previous office action, the examiner suggests that Lin discloses only increasing the transmission power (see the above or the previous office action, page 3) while the coding rate remains constant. In col. 4 lines 21-27; Lin discloses:

After retrieving the stored message, the transcoder begins processing again by determining (201) whether an L2 message is required. If the stored message is to be retransmitted, the base station will preferably transmit the message at an increased power level. Consequently, if the first transmission occurred at a first power level, the second transmission will occur at a second power level greater than the first power level.

The examiner's specifically stated that Lin failed to disclose the decreasing the coding rate for retransmission data in the previous office action.

Decreasing the coding rate is discloses by Gardner while maintaining the power

level constant i.e. peak level. In col. 2 lines 43-49 Gardner disclose the following:

In the preferred embodiment, the invention uses 3 different code rates. Each is based on a

constraint length 7 convolutional code that is standard in the industry. In most cases, the code rate used

is rate 2/3, but when a mobile unit determines that it needs more transmit power than it is capable of

providing, the code rate is changed to 1/2, and in severe cases the code rate is changed to 1/3.

In another word, Gardner discloses decreasing the coding rate from 2/3 to ½ to

1/3 to improve error correction in digital radio communication system, and decreasing

the coding rate in fix pattern.

Therefore, the combination of Lin and Gardner disclose decreasing the coding

rate (taught by Gardner) and increasing the power level (taught by Lin).

In response to the applicant argument in page 9, by definition "coding" is always

performed in the transmitter side. Therefore, the transmitter will always adjust the

coding rate.

In response to the applicant's argument in page 9, Lin discloses:

The L2 Ack indication, if received by the infrastructure, explicitly notifies the

infrastructure that the forward traffic channel message has been received by the mobile

unit. If the L2 Ack indication is not received by the infrastructure within a predetermined

time limit, the infrastructure may resend the message (se col. 1 lines 27-42).

Therefore, Lin also disclose the claimed limitation "channel environment

information of the wireless communication link is not required at the transmitter to

perform the data retransmission." The transmitter could simply wait the timer to

expired and resend the data.

In response to the applicant's argument in page 9, Lin discloses message need to retransmit is transmit at a second power level grater than the first power level (see col. 3 lines 17-19; col. 4 lines 19-26; col. 5 lines 26-31; and col. 6 lines 14-18). Therefore, Lin inherently discloses the transmission power is returned to an initialized value, if a response signal is received from the receiving party after performing the retransmission step.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any response to this action should be mailed to:

> The following address mail to be delivered by the United States Postal
> Service (USPS) only:

Mail Stop _____
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306, (for formal communications intended for entry)

Or:

The following address mail to be delivered by other delivery services
(Federal Express (Fed Ex), UPS, DHL, Laser, Action, Purolater, Hand
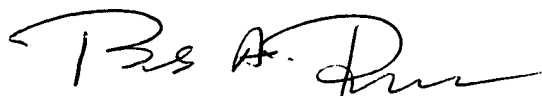Delivery, etc.) as follow:

U.S. Patent and Trademark Office
220 20th Street South
Customer Window, Mail Stop _____
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to **Bob A. Phunkulh** whose telephone number is **(571)**

272-3083. The examiner can normally be reached on Monday-Tursday from 8:00 A.M.

to 5:00 P.M. (first week of the bi-week) and Monday-Friday (for second week of the bi-

week).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor **Wellington Chin**, can be reach on **(571) 272-3134.** The fax phone number

for this group is **(571) 273-8300.**

Information regarding the status of an application may be obtained from the

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published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Bob A. Phunkulh
Primary Examiner
TC 2600
Technology Division 2616
July 25, 2006

BOB PHUNKULH
PRIMARY EXAMINER